

ABSTRACT OF THE DISCLOSURE

A magnetic recording medium has a novel underlayer structure that with reduced crystal grain size and good crystallinity to increase SNR and improve recording density. The underlayer structure includes a first underlayer, a Cr-Mn layer, and a second underlayer. The underlayer structure is formed over a nonmagnetic substrate. A magnetic recording layer composed of a Co alloy and a carbon protective layer are formed in this order on the underlayer structure. The underlayer structure, magnetic recording layer, and the protective layer can be formed in this order by DC magnetron sputtering on the substrate, which can be composed of an aluminum alloy having thereon an Ni-P plating layer that has been textured in a circumferential direction. The Cr-Mn layer have an Mn content of not more than 20 at% and a thickness ranging 0.5 nm to 3 nm, or an Mn content of not more than 30 at% and a thickness ranging 0.5 nm to 2.5 nm.